

RESPONSE OF SELECTED INDIANA HORSEWEED (*CONYZA CANADENSIS*) POPULATIONS TO 2,4-D RATES. Valerie A. Mock*, Vince M. Davis, J. Earl Creech, and William G. Johnson, Undergraduate Research Assistant, Research Associate, Graduate Research Assistant, and Associate Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907-2054.

Our previous research has shown that 141 out of 450 Indiana horseweed populations screened with 1.5 lb ae/A are resistant to glyphosate. With glyphosate resistance in many horseweed populations, 2,4-D is an increasingly important herbicide for early-season, pre-plant weed control prior to corn and soybean. The objective of this experiment was to evaluate the efficacy of 2,4-D on selected Indiana horseweed populations collected in 2003. A total of 9 horseweed populations were selected, each representing a different degree of tolerance to 2,4-D from an initial 2X (1 lb ai/A) dose in a greenhouse screen. Various rates of 2,4-D were applied at 20 GPA in a compressed air cabinet sprayer when horseweed rosettes were 2 to 4 inches wide. For the 3 populations that were relatively sensitive to 2,4-D, rates of 0, 0.03, 0.06, 0.13, 0.25, 0.5, 1, and 2 lb ai/A of 2,4-D ester were used. For the six populations that were relatively tolerant, 0.13, 0.25, 0.5, 1, and 2, 4, and 6 lb ai/A of 2,4-D ester rates were used. There were differences in efficacy between selected populations; however, none of the 9 populations appear to be resistant to 2,4-D. Two populations survived rates of 0.25 lb ai/A and produced seed.